

at least partially water soluble polymeric hydrophilising agent, which contains vinylmethyl ether monomers.

22. A method according to claim 21 wherein the at least partially water soluble polymeric hydrophilising agent is soluble in an amount of at least 5-10g/l at standard  
5 temperature and pressure.

23. A method according to claim any one of claims 21 or 22 wherein the polymeric hydrophilising agent is polyvinylmethyl ether (PVME).

24. A method according to any one of claims 21-23 wherein the polymeric hydrophilising agent is a copolymer containing vinylmethyl ether monomer and at least  
10 one other co-monomer.

25. A method according to claim 24 wherein the vinylmethyl ether monomer is present in an amount of at least 50 mole% of the polymeric hydrophilising agent.

26. A method according to claim 24 or claim 25 wherein the co-monomer is selected from the group consisting of: co-polymerisable acrylate monomers and co-polymerisable  
15 vinyl monomers.

27. A method according to claim 26 wherein the co-monomer is selected from the group consisting of: vinyl acetate, acrylic acid, methyl acrylate, methyl methacrylate, allyl methacrylate, ethyl acrylate, ethyl methacrylate, methacrylic acid, fumaric acid, monoesters of fumaric acid, diesters of fumaric acid, maleic acid, monoesters of maleic  
20 acid, diesters maleic acid, diallyl maleate maleic anhydride, esters of adipic acid (divinyl adipate), ethylenically unsaturated carboxamides (acrylamide), ethylenically unsaturated carbo-nitriles (acrylonitrile), ethylenically unsaturated sulfonic acids (vinylsulfonic acid).

28. A method of modifying the hydrophobic/hydrophilic balance of a polymer membrane prepared from a polymeric material, said method including the step of

contacting said polymeric material with polyvinylmethyl ether (PVME) to produce a modified polymeric membrane.

29. A method according to claim 28 wherein the polymeric membrane is coated with PVME.

5 30. A method according to claim 28 or 29 wherein the polymeric membrane is an ultrafiltration membrane or a microfiltration membrane

31. A method according to any one of claims 28-30 wherein the polymeric material is a hydrophobic polymer and hydrophobic/hydrophilic balance of the polymer is modified to provide a hydrophilic modified polymeric membrane.

10 32. A method according to any one of claims 28 to 31 wherein the polymeric material is poly(vinylidene fluoride) (PVDF), poly(ethylene-chlorotrifluoroethylene) (Halar) and poly(propylene) (PP) or mixtures thereof.

33. A method according to claim 32 wherein the polymeric material is poly(vinylidene fluoride) (PVDF) or poly(ethylene-chlorotrifluoroethylene) (Halar).

15 34. A method according to any one of claims 28 to 33 wherein the polymeric material is a formed membrane treated with a solution of PVME at a concentration and for a time sufficient to allow PVME saturation of said membrane to take place.

35. A method according to claim 34 wherein the polymeric material is post treated by soaking in a solution of PVME in ethanol.

20 36. A method according to claim 34 wherein the polymeric material is post treated by soaking in a solution of PVME in water.

37. A method according to any one of claims 28 to 36 wherein the concentration of PVME is less than 10%.

38. A method according to claim 37 wherein the concentration of PVME is less than  
25 5%.

39. A method according to claim 38 wherein the concentration of PVME is less than the concentration of PVME is less than 3%.
40. A method according to claim 39 wherein the concentration of PVME is greater than 0.1%.
- 5 41. A method according to any one of claims 28-36 wherein the concentration of PVME is 1 to 5%.
42. A method according to claim 34-41 wherein treatment with PVME takes place for between 5 minutes and 16 hours.
43. A method according to claim 42 wherein treatment with a solution of PVME is  
10 followed by a rinsing stage to remove unbound PVME.
44. A method according to any one of claims 28 to 43 wherein the polymeric material is treated with PVME by means of adding PVME to a membrane dope prior to casting.
45. A method according to claim 44 wherein the membrane dope is cast via a  
15 thermally induced phase separation process.
46. A method according to claim 45 wherein the membrane dope includes PVME in an amount up to 1wt%.
47. A method according to claim 46 wherein the membrane dope is cast via a diffusion induced phase separation process.
- 20 48. A method according to claim 47 wherein the membrane dope includes PVME in an amount higher than 1wt%.
49. A method according to claim 47 or 48 wherein the PVME is dissolved in a polymer dope/solvent/non-solvent mixture.
50. A method according to claim 49 wherein the solvent/non-solvent mixture  
25 includes a PVME solvent and PVME non-solvent.

51. A method according to claim 49 or 50 wherein the PVME solvent possesses weak polarity.
52. A method according to claim 51 wherein the PVME solvent is glyceroltriactate.
53. A method according to claim 49 or 50 wherein the PVME non-solvent is strongly polar.
54. A method according to claim 52 wherein the PVME non-solvent is diethylene glycol, triethylene glycol, 1,4-butanediol or mixtures thereof.
55. A method according to any one of claims 49 to 53 wherein the solvent mixture includes from 40-60% non-solvent.
56. A method according to claim 49 wherein the solvent mixture includes PVME in an amount of 0.1-2wt%.
57. A method according to claim 56 wherein the solvent mixture includes PVME in an amount of 0.7-1wt%.
58. A method according to claim 45 wherein the method of casting is a TIPS process further including treatment with a coating solution.
59. A method according to claim 45 wherein the method of casting is a TIPS process further including treatment with a coating solution which contains a solvent and a non-solvent.
60. A method according to claim 46 wherein the process is a DIPS process where N-methylpyrrolidone is present as a solvent, and water is present as non-solvent.
61. A method according to claim 21 wherein PVME is incorporated in the membrane dope and formed into a membrane, and wherein said membrane is further treated with PVME.
62. A method according to any one of the preceding claims wherein the membrane is treated to cross-link incorporated and/or adsorbed PVME.

**63. A method according to claims 62 wherein the method of cross linking is e-beam irradiation.**

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**Shelston IP**

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